

## 1. 概述 INTRODUCTION

微波带通滤波器 LF 系列产品设计用于 WLAN、GSM、Bluetooth、PDA、PHS 和无绳电话机中，具有低的插入损耗、高的衰减和小体积 SMD 片式设计，能减少复杂的调校工作，可以简化电路设计。

Microwave Band-Pass filter LF series are designed to be used in WLAN、GSM、Bluetooth、PDA、PHS & cordless phones with low insertion loss and high attenuation as well as small size SMD chip design , which can simplify your complex tuning and circuit design .

## 2. 型号 Part Number

LF 23 B1890 P56 - N30

标准规格，编号 30/Normaling Type: N30

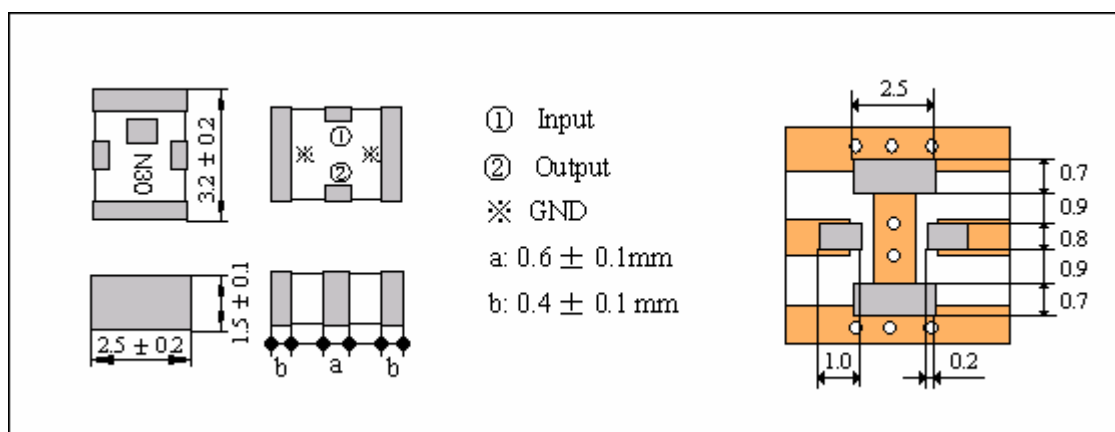
平面设计结构/Planar Design Series: P56

带通滤波器/Band Pass Filter: 1890MHz

产品尺寸/Size: 2.5×3.2×1.5

多层结构滤波器/Multi-layer Filter

## 3. 外型尺寸 Dimensions (Unit: mm)



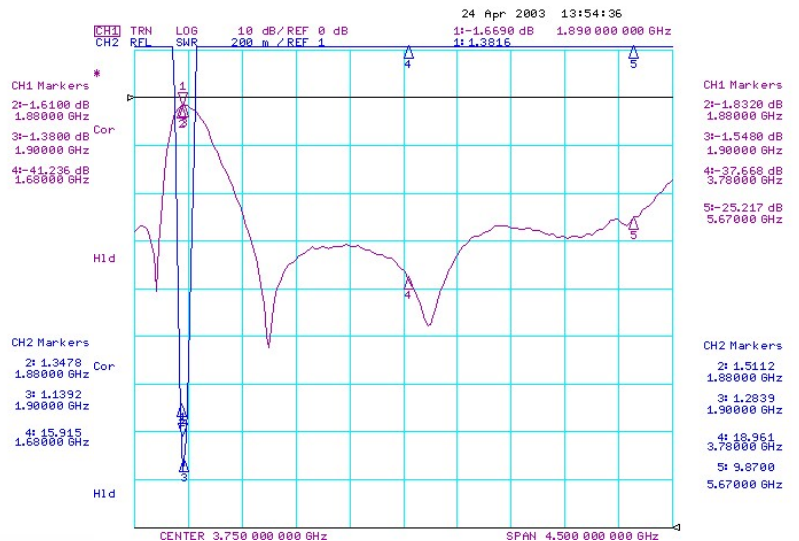
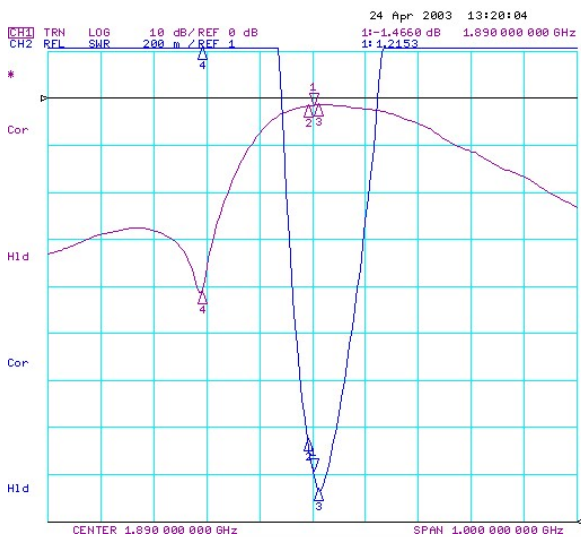
## 4. 结构及材料 Structure and Material

No	Part Name 名称	Structure and Material 结构及材料
4.1	Resonator 谐振体	Dielectric Material LTCC 介质材料
4.2	In/Output Terminals 输入/输出	Ag 银
4.3	Ground Base 接地面	Ag 银

5. 电气性能 **Electrical Characteristics**

No.	Item (项目)	Specifications (特性)
5.1	Center Frequency 中心频率 $f_0$	1890 MHz
5.2	Insertion Loss 插入损耗	$\leq 1.8\text{dB}$ (at $25^\circ\text{C} \pm 5^\circ\text{C}$ )
		$\leq 2.1\text{dB}$ (at $-40^\circ\text{C} \sim 85^\circ\text{C}$ )
5.3	Band Width 通带宽度	$f_0 \pm 10\text{ MHz}$
5.4	Ripple (in BW) 通带波动	$\leq 0.5\text{dB}$
5.5	V.S.W.R (in BW) 驻波比	$\leq 2.0$
5.6	Attenuation 阻带衰减	$\geq 24\text{dB}$ (1660~1680MHz)
		$\geq 32\text{dB}$ (at 3780 MHz)
		$\geq 20\text{dB}$ (at 5670MHz)
5.7	Permissible Input Power 输入功率 (MAX)	1 W
5.8	In/Output Impedance 输入/输出阻抗	50 $\Omega$

6. 特性曲线 **Characteristic curve**



No.	Item (项目)	Post Environmental Tolerance (环境试验后允许附加误差)
7.1	Center Frequency 中心频率 fo	$\pm 2.0$ MHz
7.2	Insertion Loss 插入衰耗	$\pm 0.5$ dB
7.3	Band Width 通带宽度	$\pm 1.0$ MHz
7.4	Ripple (in BW) 通带波动	$\pm 0.5$ dB
7.5	V.S.W.R (in BW) 驻波比	$\pm 0.2$
7.6	Attenuation 阻带衰耗	$\pm 2.0$ dB

## 7 环境试验后允许误差 Post Environmental Tolerance

经环境试验后允许比起始读数偏差见下表

Post Environmental Tolerance (Refer to the table)

## 8 环境试验 Environmental Test

基准条件: 温度范围	Temperature range	$25 \pm 5$ °C
相对湿度范围	Relative Humidity range	55~75%RH
工作温度	Operating Temperature range	-40°C ~+85°C
贮藏温度	Storage Temperature range	-40°C ~+85°C

### 8.1 耐振动 Vibration Resist

在振动频率为 10~55Hz 振幅为 1.5mm 沿 X.Y.Z 方向各振动 2 小时后测试符合表 7.1~7.6 规定。

The device should satisfy the electrical characteristics specified in paragraph 7.1~7.6 after applied to the vibration of 10 to 55Hz with amplitude of 1.5mm for 2 hours each in X, Y and Z directions.

### 8.2 耐跌落冲击 Drop Shock

在 100cm 高度处按 X, Y, Z 三个面分别自由跌落在木制地板上共 3 次后测试符合表 7.1~7.6 规定。

The device should satisfy the electrical characteristics specified in paragraph 7.1~7.6 after dropping onto the hard wooden board from the height of 100cm for 3 times each facet of the 3 dimensions of the device.

### 8.3 耐焊接热 Solder Heat Proof

能承受经 120~150°C 的温度预热 120 秒后, 在 230°C+10°C 的焊锡浸  $5 \pm 0.5$  秒。

The device should be satisfied after preheating at 120°C~150°C for 120 seconds

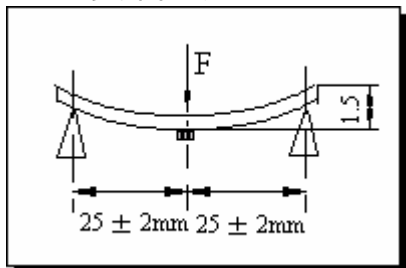
and dipping in soldering Sn at  $230^{\circ}\text{C} \pm 5^{\circ}\text{C}$  for  $5 \pm 0.5$  seconds.

#### 8.4 结合力试验 **Tensile Strength of Terminal**

在产品电极端子上或表面上应能承受 1kg 垂直拉力  $10 \pm 1$  秒。

The device should not be broken after tensile force of 1.0kg is slowly applied to pull a lead pin of the fixed device in the lead axis direction for  $10 \pm 1$  seconds.

#### 8.5 耐弯曲试验 **Bending Resist Test**



将产品按图焊在  $1.6 \pm 0.2\text{mm}$  的 PCB 板中间，由箭头方向施力： $1\text{mm/S}$ ，弯曲距离： $1.5\text{mm}$ ，保持  $5 \pm 1\text{S}$ ，产品金属层无脱落。

Weld the product to the center part of the PCB with the thickness  $1.6 \pm 0.2\text{mm}$  as the illustration shows, and keep exerting force arrow-ward on it at speed of  $1\text{mm/S}$ , and hold for  $5 \pm 1\text{S}$  at the position of  $1.5\text{mm}$  bending distance, so far, any peeling off of the product metal coating should not be detected.

#### 8.6 耐湿热特性 **Moisture Proof**

在温度为  $60 \pm 2^{\circ}\text{C}$ ，相对湿度 90~95% 的恒温湿箱中放置 96 小时，在常温中恢复 1~2 小时后测试，符合表 7.1~7.6 规定。

The device should satisfy the electrical characteristics specified in paragraph 7.1~7.6 after exposed to the temperature  $60 \pm 2^{\circ}\text{C}$  and the relative humidity 90~95% RH for 96 hours and 1~2 hours recovery time under normal condition.

#### 8.7 高温特性 **High Temperature Endurance**

在温度为  $85 \pm 5^{\circ}\text{C}$  的恒温箱中放置  $24 \pm 2$  小时，在常温中恢复 1~2 小时后测试。符合表 7.1~7.6 规定。

The device should satisfy the electrical characteristics specified in paragraph 7.1~7.6 after exposed to temperature  $85 \pm 5^{\circ}\text{C}$  for  $24 \pm 2$  hours and 1~2 hours recovery time under normal temperature.

#### 8.8 低温特性 **Low Temperature Endurance**

在温度为  $-40^{\circ}\text{C} \pm 5^{\circ}\text{C}$  低温箱中放置  $24 \pm 2$  小时后恢复 1~2 小时测试符合表 7.1~7.6 规定。

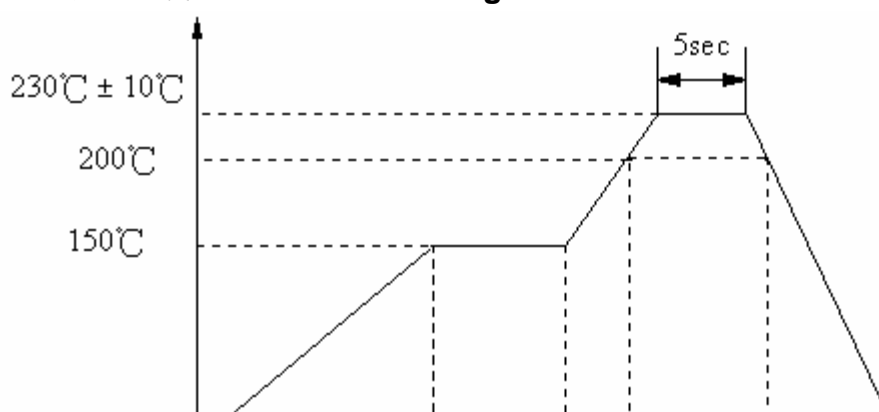
The device should also satisfy the electrical characteristics specified in paragraph 7.1~7.6 after exposed to the temperature  $-40^{\circ}\text{C} \pm 5^{\circ}\text{C}$  for  $24 \pm 2$  hours and to 2 hours recovery time under normal temperature.

#### 8.9 温度循环 **Temperature Cycle Test**

在  $-25^{\circ}\text{C}$  温度中保持 30 分钟，再在  $+85^{\circ}\text{C}$  温度中保持 30 分钟，共循环 5 次后在常温中恢复 1~2 小时后测试符合表 7.1~7.6 规定。

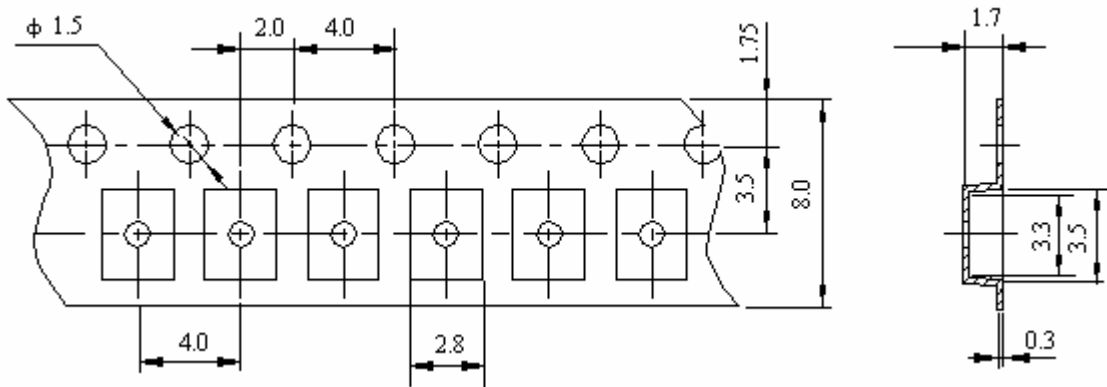
The device should also satisfy the electrical characteristics specified in paragraph 7.1~7.6 after exposed to the low temperature  $-25^{\circ}\text{C}$  and high temperature  $+85^{\circ}\text{C}$  for  $30 \pm 2$  min each by 5 cycles and 1 to 2 hours recovery time under normal temperature.

#### 9 回流焊温度 **Reflow Soldering Standard Condition**



10 包装尺寸 (3225) Packaging and Dimensions

● Plastic Tape



● Reel (2000 pcs/Reel)

